

Subject: glowbugs V1 #154

glowbugs

Tuesday, November 11 1997

Volume 01 : Number 154

Date: Mon, 10 Nov 1997 11:55:00 -0600

From: Alex Mendelsohn <alexm@pennwell.com>

Subject: FW: ARRL "Lightning Calculators"

Indeed Sandy, you speak the truth. I have one here in perfect condx, and it's a real time saver. best of all, it requires no batteries! Yippee!

Vy 73, AI2Q, Alex, in Kennebunk, Maine .---

From: Sandy W5TVW

To: ALEXM; 'BOATANCH@SMTP <boatanchors@theporch.com>'; 'GLOWBUGS@SMTP <glowbugs@www.atl.org>'

Subject: ARRL "Lightning Calculators"

Date: Friday, November 07, 1997 9:44PM

Fellow Glowbuggers & Boatanchorites,

Has anyone approached the ARRL or another publisher about reproducing the ARRL "type A" Lightning Calculator?

This is the one that allows you to figure how many turns of what guage wire

is needed at "X" turns-per-inch, to yield an inductor of "X" microhenries.

It also allows you to see what range a given inductor and variable capacitor

will tune. The range is from 400 KHz to 150 Mhz, 1 uH to 1500 uH, and 2 to 150

turns-per-inch. Indications are given for various wire guages from 2 to 36 guage, enamelled, single cotton and silk covered and double cotton and silk covered wire.

Coil dimensions range from 1/2" to 5-1/2" in diameter and from 1/4" to 10" in length. If you are into winding coils, it takes a lot of calculation and

guess work out of coil winding! Yes, I know there is probably a computer program that does this, but you can't slip the computer inside a book or take it to the "great white throne" to continue a design session!

I still have one in pretty good shape, but a brand-new one or two would be

mighty nice! For those of you who haven't seen it, look in the ARRL "ads" section of most of the 1960's Handbooks and earlier editions. It is a circular slide

rule type device that is very easy to use, and extremely useful!

Comments anyone?

73,

E. V. Sandy Blaize, W5TVW

"Boat Anchors collected, restored, repaired, traded and used!"

417 Ridgewood Drive

Metairie, LA., 70001

860 Hartley 'ECO' under construction**

*** Looking for a TRC-10 transceiver *****

*** looking for an RAL receiver *****

Date: Mon, 10 Nov 1997 18:27:09 +0000
From: Sandy W5TVW <ebjr@worldnet.att.net>
Subject: "Buzzer" wanted.

Hello gang,

I'm looking for one or two of the E.F. Johnson or similar little round bakelite cased 'high frequency' buzzers that used to be used for code practice. Anybody got any of these hanging around?

73,
E. V. Sandy Blaize, W5TVW
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860 Hartley 'ECO' under construction**
*** Looking for a TRC-10 transceiver *****
*** looking for an RAL receiver *****

Date: Mon, 10 Nov 1997 14:32:21 -0500
From: "Forrest B. Snyder, Jr." <fbsnyder@mitre.org>
Subject: Regen Detectors: Academic Question

After examining more than a few schematics for regenerative receivers in = a pleasant search for one to build, I noticed that there seem to be two = options for hooking up the grid leak. =20

Older designs (Quinby, Doerle, others) put the grid leak in parallel = with the grid coupling capacitor and grid and in series with the input = tank.=20

More modern (ARRL post WWII) designs put the grid leak across the grid = and cathode of the tube and in parallel with the input tank/grid = coupling capacitor network.

Is there any performance related reason (sensitivity, selectivity, = stability) to choose either arrangement? Has anybody in netland run any = tests?

Please reply to the net.

Forrest B. Snyder, Jr.
N4UTY
fbsnyder@mitre.org
"Sure, it's 1936 technology. But it's GOOD 1936 technology!"

Date: Mon, 10 Nov 1997 20:37:43 +0000
From: Sandy W5TVW <ebjr@worldnet.att.net>
Subject: Re: Regen Detectors: Academic Question

At 07:32 PM 11/10/97 +0000, you wrote:
>After examining more than a few schematics for regenerative receivers in a pleasant search for one to build, I noticed that there seem to be two options for hooking up the grid leak.
>
>Older designs (Quinby, Doerle, others) put the grid leak in parallel with the grid coupling capacitor and grid and in series with the input tank.
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>More modern (ARRL post WWII) designs put the grid leak across the grid and cathode of the tube and in parallel with the input tank/grid coupling capacitor network.
>
>Is there any performance related reason (sensitivity, selectivity, stability) to choose either arrangement? Has anybody in netland run any tests?
>

To tell the truth, I think the grid leaks were put in parallel with the associated capacitor in older gear as a convention and for convenience. Most of the older tubes had the grid coming out of the cap on top. It would have been very inconvenient running the grid leak's "low side" to ground and the coupling capacitor to the associated tuning gang! Why use two wiring points when one will do.

I have tried it both ways and find no difference! You MAY notice a marked difference if you are using battery tubes with DC on the filament. I have had the best results with the A+ going to common ground and the A- being the "hot" filament supply lead. Usually the AF stage following the detector works better this way, as it applies a slight negative bias on the AF stage. You will notice a lot of the older "heater" tube designs use a bias battery on the grid return of the audio stage.

The BEST one tube circuit I have found so far for a dual triode uses a single '19 or 1J6G or 1J6GT tube. The only difference is size shape and base connections. Electrically they are ALL IDENTICAL. I have experimented with the 1G6GT tube as well. It has a 1.4 volt filament at lower current than the 2 volt one in the 19/1J6 family. In either case, be sure to use a "filament rheostat" (10-20 ohms for the '19/1J6) to regulate the filament voltage. It will allow for adjusting the detector for best operation, which usually occurs at some value LESS than rated filament voltage! If you run things on batteries, it will reduce the filament drain somewhat as well. I have not had a lot of good results from using tetrode or pentode detectors with battery tubes. They seem to be VERY fussy to get going, and the slight increase in sensitivity, I think, proves more a liability than an asset.

I'm thinking of building a 3 tube sometime in the future using a single 6AG5 or 6BA6 RF stage (at relatively low gain), followed by a single 12AU7 detector/1st Audio stage, driving a single 6AK6 power amplifier. The 6AK6 will provide adequate loudspeaker audio at very low drain. (About 15-18 ma total current) Yes, the 6AQ5 would work, but at a much increased Class A standing current!

I'll also take the opportunity for another "warning". I'd advise that the layout of some existing design be adhered to closely. Even if the method of wiring looks like a "rat's nest". Regen receivers are VERY sensitive to "multiple" ground paths. If you see something that uses a "ground buss" or a common ground point, duplicate it! We are dealing with VERY FEW components and a VERY HIGH GAIN circuit here. Very small changes have a tendency to upset things more than in a conventional multi-tube superheterodyne receiver. "Modern day" VHF/UHF techniques tell us to keep ground leads and wire leads in general short. Sometimes in regenerative receivers this will work against you! Remember that the chap who did the design might have spent untold hours debugging the mechanical layout. Jim Millen relates this in an old QST article about the then new and fledgeling SW-3 receiver....how it came about and how they "debugged" it. You may build a set from scratch that works OK the first time tried. Most will require some nudging and revision to make them "go" properly, especially in the coil sets, tickler turns, bandspread taps etc. NOTHING can be as cantankerous as a regenny receiver misbehaving!

73,
E. V. Sandy Blaize, W5TVW
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417 Ridgewood Drive
Metairie, LA., 70001

860 Hartley 'ECO' under construction**
*** Looking for a TRC-10 transceiver *****
*** looking for an RAL receiver *****

Date: Mon, 10 Nov 1997 17:09:15 -0500
From: Robert Stessel <stessel@maine.maine.edu>
Subject: Re: "Buzzer" wanted.

Hi Sandy,

Got a pair in the basement, in the original box.

Not EF Johnson, can't remember the name, but I do remember they are old enough so that they have postal zone on the box instead of zip code.
Will take a closer look tonight.

stes, K1WXY

At 06:27 PM 11/10/97 +0000, Sandy W5TVW wrote:
> Hello gang,
>
> I'm looking for one or two of the E.F. Johnson or similar little
>round bakelite cased 'high frequency' buzzers that used to be
>used for code practice. Anybody got any of these hanging around?
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>
>
Robert "Stes" Stessel - K1WXY - Phone: 207-581-4393
School of Marine Science - Physical Oceanography |_*_| |oo o\|
University of Maine - Orono, Maine, USA | |_____\|/_/^_

Date: Mon, 10 Nov 1997 20:55:23 -0600
From: w5hv@aeneas.net (**Roderick M. Fitz-Randolph**)
Subject: 811 Hartley Oscillator????

Could I please have comments on the suitability of an 811 as the triode of a Hartley Oscillator with 600-700 volts on the plate?
Is the 811 a decent choice?

Thank you.

Rod, N5HV
w5hv@aeneas.net

Date: Mon, 10 Nov 1997 22:03:17 -0600 (CST)
From: Bob Roehrig <broehrig@admin.aurora.edu>
Subject: Re: Regen Detectors: Academic Question

On Mon, 10 Nov 1997, Sandy W5TVW wrote:

> I'm thinking of building a 3 tuber sometime in the future using
> a single 6AG5 or 6BA6 RF stage (at relatively low gain), followed by a
> single 12AU7 detector/1st Audio stage, driving a single 6AK6 power amplifier.
> The 6AK6 will provide adequate loudspeaker audio at very low drain.
> (About 15-18 ma total current) Yes, the 6AQ5 would work, but at a
> much increased Class A standing current!

I am using a 6AK6 in the audio stage of my regen and it works great.

UFO's are real! (It's the Air Force that does not exist)
E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI
CIS: Data / Telecom Aurora University, Aurora, IL
630-844-4898 Fax 630-844-5530

Date: Mon, 10 Nov 1997 22:20:12 -0600 (CST)
From: Bob Roehrig <broehrig@admin.aurora.edu>
Subject: wierd CW tonight

I thought I might fire up the Hartley and make a contact or so on 3579 but ended up just listening. I never heard such lousy CW. One 7 was working a 0 who had a lot more patience than I did. The 7's dits and dahs were so close to the same length I dunno how anyone could make him out. Then for about a half hour someone kept sending something like ALLAR ALEALAS AARSLQSL over and over. The only good CW I heard was Sandy's (I love that mini-chirp)!

UFO's are real! (It's the Air Force that does not exist)
E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI
CIS: Data / Telecom Aurora University, Aurora, IL
630-844-4898 Fax 630-844-5530

Date: Tue, 11 Nov 1997 10:02:22 +0100
From: Jan Axing <janax@algonet.se>
Subject: Re: Regen Detectors: Academic Question

As Sandy says, there is no difference between the two ways to connect the grid leak. I've also tested and found out the same. The only two reasons in favor for the paralleled grid leak I can imagine is the convenience with top capped tubes and the fact that old composite resistors have a significant parasitic capacitance. The switch to the grid-to-ground leak seem to have occurred just after the WWII.

Jan, SM5GNN

Date: Tue, 11 Nov 1997 10:58:42 +0000
From: BOB DUCKWORTH <bob@atl.org>
Subject: Re: wierd CW tonight

Bob Roehrig wrote:

>
> I thought I might fire up the Hartley and make a contact or so on
> 3579 but ended up just listening. I never heard such lousy CW.
> One 7 was working a 0 who had a lot more patience than I did.
> The 7's dits and dahs were so close to the same length I dunno
> how anyone could make him out. Then for about a half hour someone
> kept sending something like ALLAR ALEALAS AARSLQSL over and over.
> The only good CW I heard was Sandy's (I love that mini-chirp)!
>

Bob-

There are a lot of new to CW guys from the QRP gang. Many using 1W to 5W HB tx. I know it's not GB but it's great to see all this new CW activity

even if it is a bit sloppy. The guys over on QRP-L reflector have been very encouraging of CW with these new guys and continue to nudge them toward improvement :-)

Heck, they've got me building a radio. They have a contest going to make a transceiver using a max of 22 x 2n2222 "cock roach" transistors as the only active component. Diodes are O.K. but no IC or other transistors. Been hacking away on a 2n2222 dbm for two days and have finally decided to KISS and do a little regen and Hartley using 2n2222 and put them in the same box. That's close enough to a transceiver in my book.

I think they would be amenable to a contest for a transmitter or transceiver using a ubiquitous tube for next year. Something that could be built for less than \$5 or so in total parts. I recall some guy having NIB tubes on RRS for about 20 cents each if you bought 200 of them but forget what they were.

- -bob
wb4mnf

Date: Tue, 11 Nov 1997 10:42:55 -0500 (EST)
From: EWoodman@aol.com
Subject: Re: 811 Hartley Oscillator????

Rod,

I've been trying for quite a while to get an 811A to work well in a Hartley but haven't had much luck. I tried both series and shunt fed circuits and the last time I used a high wattage pot in place of the grid resistor to try some fine adjustment. When I adjust the grid resistance and coil tap to get a halfway decent tone then it won't oscillate reliably. More often than not it won't kick in on key down. The interesting thing is if I hold my hand over the top of the tube and key it, it will start up. The suggestion was made that maybe the internal grid to plate capacitance wasn't adequate and that's why putting my hand over the top would start it oscillating. I thought about trying the gimmick type neutralizing capacitor arrangement of putting a small plate next to the tube and tied to the grid pin on the socket but haven't gotten around to it yet.

Maybe it also likes a higher voltage. I've tried up to 450v. If it takes more than that then I don't want it in an open breadboard rig anyway.

It's too bad that I can't get it to work. It makes a nice looking tube for a breadboard transmitter and they're pretty cheap. My advice is to find another tube. If anyone can get one to work well I'd like to hear about it.

73 Eric KA1YRV

Date: Tue, 11 Nov 1997 09:17:16 -0800 (PST)
From: Ken Gordon <keng@uidaho.edu>
Subject: Re: 811 Hartley Oscillator????

> Could I please have comments on the suitability of an 811 as the
> triode of a Hartley Oscillator with 600-700 volts on the plate?
> Is the 811 a decent choice?

Probably not. It requires considerably more feed-back in order to get it to oscillate than most other tubes of that type. Most zero-bias triodes operate this way. If you directly connect a small cap from grid to plate, that MAY solve the problem, but it may also introduce other problems.

Ken W7EKB

Date: Tue, 11 Nov 1997 18:48:19 +0100
From: Jan Axing <janax@algonet.se>
Subject: A very low voltage regenny

I have put up a new page at my site with a 2 tube regenny which works with a 3V and a 4.5V battery. It features 2 6C6 pentodes in a strange circuit where the suppressor grid is used as the control grid, the 2 other grids are connected to B+.

Point a nut scrape or something at:
<http://www.algonet.se/~janax/lvregen.htm>

Enjoy!
Jan, SM5GNN

Date: Tue, 11 Nov 1997 15:06:50 -0600
From: w5hv@aeaneas.net (Roderick M. Fitz-Randolph)
Subject: Re: 811 Hartley Oscillator????

>Rod,
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>It's too bad that I can't get it to work. It makes a nice looking tube for a
>breadboard transmitter and they're pretty cheap. My advice is to find another
>tube. If anyone can get one to work well I'd like to hear about it.
>
>73 Eric KA1YRV

Eric, thank you very much for the informative message. I really appreciate it. I have access to a Heath HP-23 power supply that I believe will provide 600 to 700 volts at 200 ma. and 6.3 vac at 4 amperes or more. It thought that might make a good match for the 811A I've acquired.

The thought of 700 volts exposed to the operator is not anything new to me, Eric. My first Novice rig was an upside down cigar box with a 6AQ5 oscillator and an 807 amplifier on 40 meters. It was all exposed. I ran the 807 pretty hard (too much screen voltage) and ran out of my supply within a month or two. I changed the filament transformer on the power supply (different chassis) to a 12.6 volt transformer and installed a 1625. It was necessary to use 10" lengths of zip cord to solder to the pins on the 1625 and into the 5 pin 807 socket. I then laid the 1625 on its side on the top of the cigar box and transmitted away!!!! I could (and actually did) pick up the final tube, gingerly, by the base and wave it around in the air as I pounded the key. (I didn't do that very often.... just enough to prove that it could be done. Youth is wonderful... they think nothing can happen to them!!!!).

Anyway, the bottom line is that, during my career, I have been very heavily shocked by up to 3,000 volts (hand-to-hand) and lived to talk about it BUT you wouldn't believe the incredible inhibition that built in me against getting shocked again.... therefore, I will exert MORE than reasonable care if I decide to go ahead with the experiment. If I do decide to go forward, I'll let you know the results.

Best Regards'

Rod, N5HV
w5hv@aeneas.net

End of glowbugs V1 #154
